IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPEAL BRIEF – 37 C.F.R § 1.192

U.S. Patent Application 09/768,829 entitled,

"Compact Universal Keyboard"

Real Party in Interest: International Business Machines Corporation

Related Appeals and Interferences:

An appeal brief was filed on October 8, 2003.

Status of Claims:

Claims 1-10 and 12-36 are pending.

Claim 11 is cancelled.

Claims 1, 2, and 6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Wang et al., USP 5,661,476.

Claim 30 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Lu, EP0889388 A1.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Acevedo, USP 5,818,361.

Claims 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Abraham, USP 5,841,374.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Moon, USP 5,812,117.

Claims 8, 9, 12, and 31-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Will, USP 5,825,353.

Claims 10, 11, 13, and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Will as applied to claim 8, and further in view of Kaehler, USP 5,128,672.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Will as applied to claim 8, and further in view of Wang.

Claims 15, 16, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Wang.

Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Wang as applied to claims 15 and 16, and further in view of Kaehler.

Claims 20-29 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Macor, USP 5,841,849, in view of Lu.

Claim 36 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Kaehler as applied to claim 17, and further in view of Lo, USP 6,072,471.

Status of Amendments:

No amendments have been filed since the final rejection issued 06/15/2004.

Summary of Claimed Subject Matter:

(NOTE: All citations are made from the original specification, including the figures.)

In order to provide a keyboard input on the limited surface space of electronic appliances or devices, the present invention provides a reduced set character entry system for an electronic appliance ***(figure 1b)*** that comprises a first set of multiple keys ***(figure 1b, elements 106 and 108)*** representing a selected subset comprising a single row of characters from a set of QWERTY style keyboard rows ***(page 10, lines 17+)***. Each of the keys in the first set are associated with a character of the selected QWERTY subset ***(see figure 1c, element 114)***, such that when any of the first set of multiple keys is actuated, the associated character is input to the electronic appliance. Further, the present invention comprises a second set of keys ***(figure 1b, elements 110a and 112)*** (control keys) wherein at least one of the keys in the second set of keys is actuated to change the selected QWERTY row ***(page 11, lines 6-11)***. That is, the control keys are provided to allow the user to change the row of input keys from one subset to another. The display of the electronic appliance displays the characters of the selected row ***(figure 1c; page 12, lines 1-3)***. The character and control keys may be placed on the top or sides of the device. The control keys may be used to shift the case of the characters associated with the first set of keys ***(page 11, lines 11-12)***. The display is also used to display previously input characters ***(figure 1c, element 116)***.

The present invention claims an electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces ***(figure 1a)***. A first set of input keys is located on said top surface comprising a single row of characters ***(figure 2a)***. Each of the input keys is associated with an individual character of a first subset of a set of input characters. Each subset comprises a row of characters from a set of keyboard rows ***(page 11, lines 16-21)***. Actuation of any of the input keys causes the character associated with the actuated input key to be input to the electronic appliance ***(figure 2a)***. Further, at least one

selection key is located on one of the side surfaces of the electronic appliance ***(figure 2a, elements 210a and 210b)***. The actuation of a selection key changes a first subset to a second subset so that each of the input keys is associated with an individual character of the second subset. A display, located on the top surface of the appliance, displays the first subset of input characters ***(figure 2a, element 204)***, and is also changed to display the second subset ***(page 12, lines 1-5)*** when the selection key is actuated. A plurality of displays and characters may be used with the above described invention ***(figure 2a; page 12, lines 5-7; and page 16, lines 6-11)***.

A compact keyboard input device for an electronic appliance is claimed in the present invention. The input device comprises a set of character input keys comprising an electronic character display and corresponding input mechanism ***(figure 2b)***. The set is less in number than a QWERTY style keyboard input character set and displayed in a single row. The electronic character display of each of the keys in the set displays an individual character of a QWERTY style keyboard input character set ***(figure 2b, elements 212a and 212b)***. Actuation of the corresponding input mechanism of the keys causes the displayed character to be input to the electronic appliance ***(figure 2a)***. Additionally, at least one selection key ***(figure 2b, elements 210a and 210b)*** is provided wherein actuation of the selection key causes each of the displays to display a different individual character of the input character set ***(page 12, lines 17-20)***. The device may also have an output display displaying previously entered characters ***(figure 1c)***.

An electronic appliance having an input/output device with a display displaying a selected set of input characters ***(figures 3a and 3b; page 13, line 20)*** is claimed by the present invention. The display has a wrist band connected to it for securing the display to the wrist of a user ***(figure 3b)***. Operatively connected to the display is a flexible assembly ***(figure 3a, element 308)***. The flexible assembly has a set of character keys located thereon; each of the character keys is associated with an individual character of a selected set of input characters and at least one control key, wherein the selected set of input characters comprises a single row of characters from a set of keyboard rows ***(page 13, line 20-page 14, line 1)***. Actuation of any of the character keys causes the character associated with that actuated key to be input into the device and actuation of a control key causes the currently selected set of input characters to be changed to a

different set of input characters *(page 13, lines 18-19; page 14, lines 7-8)*.

The present invention claims a portable phone including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces, and a reduced set character entry system *(figures 4, 5a, 5b)*. A display is located on the top surface of the phone *(figures 4, 5a, 5b)*, and an input assembly is operatively connected to the phone *(page 14, lines 11-12; page 15, lines 14-16)*. The input assembly has a set of character keys located thereon, each of said character keys associated with an individual character of a selected set of input characters. The selected set comprises a single row of characters from a set of keyboard rows. At least one control key is also provided *(page 14, lines 12-13; page 15, lines 9-10)*. Actuation of any of the characters keys causes the character associated with that actuated key to be input into the phone *(page 15, line 17)*. Actuation of a control key causes the currently selected set of input characters to be changed to a different set of input characters *(page 15, lines 10-14)*.

The present invention claims an electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system. Provided is an input assembly integrally connected to said electronic appliance *(figures 3b and 4)*, wherein the input assembly has a set of character keys located thereon *(figure 3b, element 306)*. Each of the character keys is associated with an individual character of a selected set of input characters; the selected set comprises a single row of characters from a set of keyboard rows *(page 13, lines 20+)*. At least one control key *(figure 3b, element 312)* is also provided. The input assembly is positionable in a first position where the input assembly is substantially enclosed within said housing *(page 13, lines 15-16)* as well as in a second position where the character keys and control key are exposed for actuation *(figures 3a and 3b; page 13, lines 16-18)*. Upon positioning the input assembly in a second position, actuation of any of the characters keys causes the character associated with the actuated key to be input into the device, and actuation of the control key causes the currently selected set of input characters to be changed to a different set of input characters *(page 13, lines 18-20)*.

An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system of the present invention comprises a first set of input keys located on any of the side surfaces ***(figure 5a, element 502)*** arranged in a single row. Each of the input keys is associated with an individual character of a first subset of a set of input characters, wherein the set of input characters comprises a row from a set of keyboard rows, and actuation of any of said input keys causes the character associated with the actuated input key to be input to said electronic appliance ***(page 15, lines 10-13)***. Also, at least one selection key is located on any of the side surfaces ***(figure 5a, element 504)***. Actuation of the selection key changes the first subset to a second subset so that each of the input keys is associated with an individual character of the second subset ***(page 15, lines 13-14)***.

Grounds of Rejection to be reviewed on Appeal:

1. Was a proper rejection made under 35 U.S.C. § 102(b) using existing USPTO guidelines?

2. Was a proper rejection made under 35 U.S.C. § 103(a) using existing USPTO guidelines?

ARGUMENT:

REJECTIONS UNDER 35 U.S.C. § 102(b)

Claims 1, 2, and 6 are rejected under 35 U.S.C. § 102(b) as being anticipated by USP 5,661,476 (Wang et al.), hereafter Wang.

To be properly rejected under 35 U.S.C 102(b), each and every claim element must be shown in a single reference. Wang fails to provide at least the following elements: a device comprising a reduced set character entry system as a single row of input characters that are chosen as a subset of a complete QWERTY style character set, a keyboard in limited space (such as on the side of a handheld device), and a set of keys used to shift the case of the characters associated with the input character keys. The examiner states on page 2 of his argument that Wang teaches a reduced set character entry system for an electronic appliance comprising a

first set of multiple keys representing a selected subset comprising a single row of characters from a set of QWERTY style keyboard rows as in claim 1 of the present invention (Wang, figure 1a, elements 103a – 103c and column 3, lines 21 – 53). The examiner further contends that each of the keys is associated with a character of the selected subset such that when any of the first set of multiple keys is actuated the associated character is input to the electronic appliance. However, a closer reading of Wang shows in figures 1b and 1c, with corresponding text in column 3, lines 28-53, that elements 103a-103c provide for two rows on a display and not a single row of input character keys. Further, Wang teaches the display of a complete set of characters in many rows (Wang, figure 1a, element 101). Wang does not provide, nor suggest, a reduced character entry system using a single row to achieve the resulting reduced set.

The examiner also states on page 2 that Wang teaches a second set of keys, at least one of the second set of keys actuated to change the selected row (Wang, figures 1a & 1b, elements 102-1-102-6; column 3, lines 21 – 53). The examiner has, however, incorrectly interpreted the claim and has not correctly correlated the claim language with the present invention's specification. First, the keys 102-1-102-6 in Wang—as indicated by the examiner as input—actually correspond to a vertical group of keys that cannot input a character alone. Rather, keys 102-1 and 102-6 are the first step in a two-stroke sequence (Wang, column 3, lines 41-53). In the present invention, each key in the row of character keys corresponds to a character in a row of the QWERTY style keyboard (specification, figures 1c and 2a; page 10, lines 16+). Secondly, the "second set of keys" which the applicant refers to are not input keys at all. Rather, as disclosed in the present invention's claims and specification, the second set of keys are provided as control keys, designed to change the character input keys from a selected subset in the row to an additional subset (specification, page 11, lines 4-11). On pages 2-3 of his argument, the examiner has incorrectly interpreted the use of the second set of keys. Wang does not provide nor suggest such type of control keys. The examiner also states that Wang teaches the actuation of one of the second set of keys to shift the case of the characters associated with the first set of keys (Wang, column 3, lines 65 – 67). However, when closely reading this text, Wang states that an additional key must be added. Wang does not disclose shifting the case of a subset row as claimed in the present invention.

In applicant's present invention, a first set of keys is provided as character entry keys and a second set of keys is provided as control buttons on an electronic device. In the first set of keys each key position corresponds to one character out of a set of selected characters. Using the second set of keys (control keys), the user selects which set or subset of characters the first keys will represent, as well as other functions such as shifting between upper and lower case characters and alpha-numeric control. For example, character key positions are provided to correspond to the symbols of a row of a traditional QWERTY keyboard. The second set of keys (control keys) may be used to select which row of the traditional QWERTY keyboard is associated with the character key positions, as well as other control functions such as capitalization. The selected characters are shown on a display on the electronic/computing device in order to provide visual feedback.

Wang is a personal information device having "M" number of keys divided into a first group and second group. Inputting each symbol requires a two-stroke sequence in which a first key and then a second key are selected from different key groups in order to input a symbol. Wang displays a complete set of characters to the user on a device (Wang, figure 1a, element 101). For example, a first row of keys is provided horizontally and a second row is provided vertically. The user chooses from the set by selecting a key from the horizontal row and from the vertical row (not necessarily in that order) in order to obtain the selected input key to be output on the display (Wang, figures 1b and 1c). The present invention displays only a selected subset of characters in a single row to achieve the limited space requirement. The present invention specifically displays a chosen set of characters from QWERTY style keyboard rows. Wang does not explicitly or implicitly disclose or suggest displaying a selected subset. Wang also does not teach or suggest a second set of keys used to change a selected row (subset) or to shift the case of the characters associated with the character keys. Further, Wang teaches away from the present invention's need to provide a keyboard on a limited space by displaying the entire set of characters—the opposite result.

Wang clearly fails to provide many of the claim elements and therefore cannot be a proper rejection under 35 U.S.C. § 102(b).

Claim 30 is rejected under 35 U.S.C. § 102(b) as being anticipated by Lu, EP0889388 A1.

The Lu reference discusses a data input interface for input of text into a hand-held computer device. A subset of characters is chosen by the user so that the user can view only a few characters at a time, allowing better visibility and easier use of a stylus. The subsets that are associated with the displayed characters are sequences of the alphabet (e.g., A through F, G through L, etc.) and not keyboard style rows. This claimed element is important so as to achieve a "normal" keyboard where the user would be immediately familiar with the key patterns. Lu specifically teaches away from this feature. As described above, the present invention uses an additional key that is not part of the input keys as the selection key for changes between subsets, whereas Lu uses the keys as both input and selection keys. In order to be properly rejected under 35 U.S.C. § 102(b), Lu must show each and every claimed element of the present invention. Lu does not teach many of the elements of the present invention. For example, Lu does not teach the use of a selection key on a side surface. Lu illustrates the display which is located on the top surface of the device and does not show or suggest the use of a selection key on the side surface of the device. Lu does not illustrate or suggest the use of input keys and at least one selection key on any of the side surfaces of the device, and, therefore, does not anticipate each and every element of the claimed present invention.

For claim 30, the examiner states that Lu teaches an electronic appliance having a first set of input keys located on a side surface in figures 2-7. However, on pages 11 and 12 of the examiner's argument, the examiner explicitly states that "...Lu...does not specifically state that one or more of the first set of input keys are on a side surface." Lu does not show input keys on a side surface with respect to the described top, bottom, and plurality of side surfaces of the electronic appliance as shown in the present invention. Further, Lu describes figures 2-7 as illustrations of a display (Lu, column 4, lines 40-45) which is located on the top surface of a PDA or pager. Lu does not imply the use of input keys on a side surface. The examiner additionally states on page 3 that the first set of input keys as described by Lu are a "subset comprising a row of characters from a set of keyboard rows." However, a further reading of the Lu specification states that Lu describes an alphabetical group of characters that are divided in terms of the order of the alphabet, not keyboard style rows as required and claimed by the present invention. Finally, the examiner states on page 3 that Lu also teaches that at least one

selection key is located on a side surface. However, the examiner clearly states on page 8 of his argument that "Lu does not teach that the selection key is located on one of the side surfaces." Lu does not show or describe a selection key on any side surface as in the present invention. The rejection on claim 30 is therefore incorrect and therefore invalid.

REJECTIONS UNDER 35 U.S.C. § 103(a)

To establish a prima facie case of obviousness under U.S.C. § 103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Additionally, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure (In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)). Applicants contend, as seen in the arguments above, that the Examiner, based on the office action of 06/15/2004 has failed to establish a prima facie case of obviousness under U.S.C. § 103.

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of USP 5,818,361 (Acevedo).

The examiner states on page 4 of the rejection that "Wang does not teach that each of the first set of multiple keys comprises an electronic character display and input mechanism." The examiner states that "Acevedo teaches that each of a set of multiple keys comprises an electronic character display and input mechanism, the electronic character display retaining an image of an associated character (Acevedo, figure 1; column 3, lines 1- 4; column 4, lines 1-7)." Acevedo also provides a plurality of display keys having a liquid crystal display, light emitting diode, or other similar display situated thereon, used with software to assign and depict alphanumeric characters and indicia to the keys. However, a closer reading of Acevedo shows that it is simply is a conventional keyboard for use with a computer and software

(Acevedo, figure 1; column 3, lines 61-63). Acevedo does not teach the use of a compact, reduced character keyboard input device having a single row of characters. Further, Acevedo does not invite combination with Wang to produce a portable, compact, reduced character set entry system in an electronic device as claimed by the present invention, nor would it seem obvious. Therefore, the examiner has failed to establish a suggestion or motivation for such combination, as well as the teachings provided in claim 3 of the present invention.

Claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of USP 5,841,374 (Abraham).

As noted by the examiner on page 5 of the rejection, Wang does not specifically teach a top surface, bottom surface, a plurality of side surfaces connecting the top surface and the bottom surfaces, with the electronic appliance display disposed on the top surface, nor does it teach the first set of at least ten keys disposed on the top surface, and the second set of keys disposed on one or more of the side surfaces. The examiner states that Abraham teaches a top surface, a bottom surface, a plurality of side surfaces connecting the top surface and the bottom surface with the electronic appliance display disposed on the top surface (Abraham, figures 1 and 2; element 22). The examiner states that Abraham also teaches a first set of at least ten keys disposed on the top surface and a second set of keys disposed on one or more of the side surfaces (Abraham figures 1 and 2, elements 16, 20, 21; column 3, lines 3 - 22; column 6, lines 16 - 19; and figures 14 and 15). However, claim 4 is dependent on claim 1, and the device as disclosed in Abraham does not provide a reduced set character entry as disclosed in the present invention.

Abraham provides a portable word processor having a display and a keyboard with six toggle keys operated by a user's fingertips and the others by the user's thumbs. The characters associated with the keys in Abraham are not a selected row of characters that are a subset of a complete character set of keyboard rows (Abraham, figures 11 and 13). Abraham provides toggle keys that pivot in any of six directions to make contact with one of six conductive contacts that are associated with a character key. A seventh character key is associated with the depression of the toggle key. The complete set of input characters are always available in Abraham. Thus, Abraham does not disclose a method of changing the character set. Further, Abraham does not disclose a single row of characters that are a subset of the complete set of QWERTY style

keyboard rows.

Also, the present invention allows for not only control keys but also a set(s) of character (input) keys to be on the side surface. In regards to claim 5, the examiner further suggests that Abraham also teaches one or more of the first and second set of keys are disposed on one or more of the side surfaces on page 6 of his argument. Although thumb keys are provided on the side of the device in Abraham, they do not provide the same control function(s) as in the present invention; for example, changing the selected row of characters. The thumb keys of Abraham are provided only to perform functions on the input set and do not shift from one subset to another subset (Abraham, column 4, lines 35-43). The thumb keys of Abraham are not input character keys. Niether Wang nor Abraham teach or suggest the use of input keys and control keys on the side surface of an electronic device as claimed in the present invention.

Since Wang utilizes a two-keystroke sequence for character entry and Abraham utilizes a pivoting toggle key that contacts a conductor for inputting a character, it would not have been obvious, nor a motivation, to combine these references. Even if the combination was deemed proper, the combination of Wang and Abraham would not produce the claimed elements of the present invention.

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of USP 5,812,117 (Moon), hereafter Moon.

The examiner contends that the up-down left-right keys in figures 1a-1c of Wang strongly suggest, but do not specifically teach, a second set of keys, having a first key that is actuated to change the currently selected row to a row above the currently selected row, and a second key that is actuated to change the currently selected row to a row below the currently selected row.

However, the examiner describes Moon as teaching two such keys (Moon, figure 2b, element B2; column 3, lines 24 – 49). Claim 7 is dependent on claim 1. Claim 1 of the present invention selects a single row of input characters as a subset of QWERTY style keyboard rows. The keys in Moon, however, are used to scroll through the list of available inputs, which are displayed in alphabetical and numerical order (Moon, figures 2a and 2b; column 3, lines 27-36). Moon does not disclose a single row of characters as displayed or

chosen as a subset from a QWERTY style keyboard set as claimed in the present invention.

As previously noted, Wang also does not disclose a single row of characters that are a subset of a complete QWERTY set. Rather, Wang teaches the display of the complete set of characters to the user. Therefore, it would not have been obvious to have combined the scroll keys of Moon with the system of Wang to have allowed quicker and more efficient entry of keyed data, as all input characters would be displayed and thus not achieve the desired result of the applied references. In addition, Moon does not particularly invite such a combination. Since the combination of Moon and Wang is not suggested, nor would it produce the claimed elements, it is not deemed proper.

Claims 8, 9, 12, and 31-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Will, USP 5,825,353.

Claims 8, 9, 12, and 31-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Will. The examiner suggests that Lu uses input characters that are a subset of a row of characters from a set of keyboard rows. However, as noted above, Lu describes an alphabetical group of characters that are divided in terms of the order of the alphabet, not keyboard style rows as in the present invention. The subsets that are associated with the displayed characters are rows of the alphabet (e.g. A through F, G through L, etc.) and not keyboard rows as in the present invention. Additionally, it is stated by the examiner that Lu teaches at least one selection key for changing from one subset to another. However, the examiner states on page 8 of his argument that "Lu does not teach that the selection key is located on one of the side surfaces." The examiner goes on to state on page 9 that Will teaches a selection key that is located on one of the side surfaces, and that it would have been obvious to one of ordinary skill to combine the selection key as taught by Will with the electronic appliance of Lu. Will discloses a rotating thumbwheel that, when rotated up or down, allows a user to move between menus or windows. The thumbwheel of Will may be used for dialing, such that the user can rotate between single numbers, letters, or digits. However, the thumbwheel of Will is not used in the same manner as disclosed in the present invention. In the present invention, the actuation of the selection key is used to change from a first subset to a second subset in a set of keyboard rows. Will does not teach or suggest the use of the thumbwheel for changing between

sets of a single row of input keys. Also, the combination of Lu and Will would not have been obvious because the reference to the selection key of Lu has been misinterpreted. The selection keys (a, g, m, s, y, or 0) that are described in Lu are the same keys used for input keys; that is, the input keys in Lu also act as keys for selecting subsets. The present invention requires that the input keys be on a top surface and at least one selection key be located on a side surface of the device. The selection key of the present invention is provided as an additional key that is not associated with the input row. If the keys in Lu are used as both input and selection keys, and they remain in a single row as required by the present invention, they can not be located on different surfaces. Further, as noted by the examiner on page 8, Lu does not teach the use of a selection key on a side surface. Because Lu does not invite the use of an additional key or a key on the side of the device, the combination of Lu and Will is not obvious and is found to be improper. Further, because both Lu and Will fail to provide or suggest the combination for each and every element in claim 8, dependent claims 9 and 12 are not shown by Lu or Will as they inherit the limitations of the independent claim.

Claim 31 is dependent on claim 30. The examiner states that Will teaches that the electronic appliance may be a portable phone. Although Will illustrates a portable phone device, claim 31 requires that each and every element of the independent claim be taught. As previously discussed with reference to claims 30 and 8, Lu does not show input keys on a side surface with respect to the described top, bottom, and plurality of side surfaces of the electronic appliance in the present invention. Further, Lu describes an alphabetical group of characters that are divided in terms of the order of the alphabet, not keyboard style rows as in the present invention. Finally, Lu does not teach the use of a selection key on a side surface. Lu only illustrates the display which is located on the top surface of the device and does not show or suggest the use of input keys or a selection key on the side surface of the device. Therefore, neither Lu nor Will teach the elements of dependent claim 31. The requirements of claim 30 are not met and a prima facie case of obviousness under 35 U.S.C. § 103 has not been established.

The examiner states that Will teaches the use of input keys and the selection key on different ones of the side surfaces as claimed in claims 32 and 33 of the present invention. Since no input keys are on a side surface of Lu or Will, the input and selection keys can not be located

on different side surfaces of the device. As noted by the examiner on pages 11 and 12, neither Lu nor Will state the use of the first set of input keys on a side surface. The present invention illustrates the single row of input keys on one side surface and at least one selection key another side surface (with respect to the device having a top and a bottom). Claims 32 and 33 are dependent on claims 30 and 31 (respectively) whose elements are not provided in Lu or Will. Neither Lu nor Will, nor their combination, suggest or illustrate the use of input keys and selection keys on different side surfaces nor have they been proven to establish a case of obviousness.

Claims 10, 11, 13, and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Will as applied to claim 8, and further in view of Kaehler, USP 5,128,672.

On page 10 of his argument, the examiner states that "neither Lu nor Will specifically teach a plurality of displays." The examiner contends that the Kaehler teaching of a text display and a character set display screen illustrates the use of a plurality of displays, and that it would have been obvious to combine the teachings of Kaehler with Lu in view of Will. However, as claim 10 is a dependent claim (on claims 8 and 9), and it has been shown that Lu and Will do not suggest or show the required elements of the present invention, the rejection is deemed improper and is not obvious to combine Kaehler with Lu in view of Will.

Claim 11 has been cancelled and rejections therefore are deemed moot.

For claim 13, the examiner states that Kaehler teaches shift buttons that are located on one of the side surfaces for switching the displayed characters between upper case and lower case (Kaehler, column 7, line 43-column 8, line 15; element 18). However, claim 13 is dependent upon independent claim 8, which requires a single row of input characters as well as at least one selection key on the side surface for shifting the case of the subset. Kaehler does not suggest a single row of input characters, a selection key on the side surface of the device, and a controlling key on one of the side surfaces for shifting the case of the input keys. Therefore, Kaehler does not teach the use of a control key as in the present invention. Furthermore, the combination of Lu and Kaehler is not implied or suggested.

The examiner states for claim 34 that neither Lu, Will, nor Kaehler state that one or more

of the first set of input keys are on a side surface. Claim 34 is dependent on claims 33, 31, and 30. Lu, Will, and Kaehler fail to show the use of input keys on a side surface. Further, neither Lu nor Will nor Kaehler (or their combination) suggest or illustrate the use of input keys and selection keys on different side surfaces.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Will as applied to claim 8, and further in view of Wang.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Will as applied to claim 8 above, and further in view of Wang. Claim 14 is dependent on claim 8 and adds that the subsets are rows of a QWERTY style keyboard layout. It is noted by the examiner on page 12 of his argument that "neither Lu nor Will specifically teach that the subsets are rows of a QWERTY style keyboard layout." The examiner also states that Wang teaches "subsets that are rows of a QWERTY style keyboard layout." However, as previously discussed with reference to claims 1, 2, and 6, Wang fails to provide or suggest at least the single row of characters chosen as a subset of a set of QWERTY style keyboard rows, a keyboard in limited space such as on the side of a handheld device, and a set of keys used to shift the case of the characters associated with the character keys. Also, Will does not teach the use of a selection key on a side surface used in the same manner as in the present invention. Therefore, it would not be obvious to combine Lu, Will and Wang, and this combination would not produce the claimed invention. In particular, Lu does not provide all of the claimed elements in claim 8. Because the combination of each of the references lacks the claimed elements, the examiner has failed to establish a prima facie case of obviousness as required, and the rejection is without merit.

Claims 15, 16, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Wang.

The examiner states for claim 15 that Lu teaches the use of a set of character keys in a single row in an input device. However, as noted by the examiner on page 14 of his argument, Lu does not teach that "the subsets are rows of a QWERTY style keyboard layout." Lu does not implicitly or explicitly suggest the use of a traditional QWERTY style keyboard as in the present

invention. As noted in the specification of the present invention, most devices, such as the Lu reference, have keys arranged in a different manner than a traditional QWERTY keyboard, making the process of inputting complicated for those familiar with it. A QWERTY keyboard is a known standard for input, and its replication as single rows enables the user to easily input into a device without the need for retraining, learning, and memorizing a new sequential key layout (i.e. not having to visualize the letter sequences as they appear, but rather knowing the sequences from previous experience). The examiner introduces the Wang reference for teaching QWERTY style rows as in the present invention. Again, Wang displays a complete set of characters to the user on a device. Wang fails to disclose a set less in number than a QWERTY style set, a single row of character input keys, and electronic character displays and corresponding input mechanisms that are associated with an individual character. Both Lu and Wang fail to show each and every element of claim 15 of the present invention, alone or combined, and do not to achieve the claimed compact keyboard device.

Because claims 16, 18, and 19 are dependent on claim 15, and neither Lu nor Wang provide the single row that is a subset of QWERTY style keyboard rows or the electronic display as in the present invention, the rejection of these claims is invalid.

Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Wang as applied to claims 15 and 16, and further in view of Kaehler.

The examiner states that "Kaehler teaches that one ore more of the character keys and selection keys are disposed on one or more of the side surfaces." However, Kaehler does not disclose a set of input keys in a single row or illustrate or suggest the placement of input character keys on the side surface of the device as in the present invention (see above with reference to claims 10, 13, and 34). Furthermore, claim 17 is dependent on claim 15. Neither Lu nor Wang provide or suggest producing the combination of the present invention. Therefore, the combination of the device in Lu and Wang with the reduced keyboard of Kaehler is not obvious and would not produce the elements of this claim.

Claims 20-29 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Macor, USP 5,841,849, in view of Lu.

Regarding claims 20-29, Macor fails to disclose character keys or a flexible assembly having a set of character keys located thereon, a single row of input characters based on keyboard rows, an input assembly that is externally attachable to a wrist watch or portable phone, a flexible assembly that pivots from a parallel (for example, along and underneath the wristband) to a position substantially perpendicular, and display that is rotated to be in an orientation appropriate for viewing by a user.

Macor discusses a personal telecommunication device, such as a portable phone or a wrist band, that allows a user to operate the device as a telephone or electronic messaging device with one finger by using virtual function keys and buttons. In order to choose a selected key, a trackball or joystick is maneuvered to the location of the selected key and depressed (Macor, figure 12, element 300). The input characters of Macor, in both the wrist watch and portable phone, are virtually displayed as a complete set (see figure 6, element 50) rather than as a subset of a complete set as disclosed in the present invention (see figures 6 and 7 of the present invention).

The examiner states on page 16 that "Macor does not teach that the display shows a selected set of input characters and that the flexible assembly having a set of character keys located thereon." The examiner then suggests that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the reduced character entry system of Lu with the wrist mounted input/output device of Macor. However, Lu fails to provide or suggest the combination or use off the device as a wristwatch or portable phone with character keys and at least one control (selection) key. Also, by using a trackball, Macor teaches away from the single row of character keys the present invention. Therefore, the combination of the system of Lu with Macor would not produce the claimed invention.

Macor does not teach that the display shows a selected set of input characters. Further, in particular reference to claims 21, 23, 24, 25, and 27 of the present invention, Macor does not disclose character keys or a flexible assembly having a set of character keys located thereon that is connected to the display. The examiner says that Macor teaches that an input assembly is integrated with the portable phone, and that the input assembly is rotatable from a closed position where the input assembly is substantially enclosed within the housing to a position where the character keys and the control key are exposed for actuation. Claim 21 requires that the

flexible assembly is able to pivot from a position along and underneath a wristband to a perpendicular position. As shown in figures 3, 5, and 7 of Macor, the Macor device opens using a hinge and does not and can not be pivoted along and underneath as in the present invention.

Further, the flexible assembly the examiner describes does not correlate with the claimed elements of the independent claim 23—wherein the input assembly is a selected set of input characters comprising a single row from a set of keyboard rows (in the present invention) on a portable phone. Specifically, the examiner states on page 18 of his argument that "Macor does not teach that the display shows a selected set of input characters and that the flexible assembly having a set of character keys located thereon." Macor has a complete set of input characters on the main screen of the electronic device, not on the flexible assembly (Macor, figures 6-11). Further, Macor does not disclose a subset of inputs on the flexible assembly as noted in the claims. Again, Lu does not disclose a subset as disclosed in the present invention. Combining the complete set of Macor with the reduced set in Lu would not have been obvious, and therefore the rejection is improper.

Also, the examiner states that figures 1, 4, 6, 8, and 10 illustrate the elements in claim 26. However, claim 26 (dependent on claim 23) of the present invention requires the input assembly be externally attachable to a portable phone. Neither the figures nor specification of Macor describe or suggest an externally attachable device.

Dependent claims 22, 28, and 29 fall under the arguments of their independent claims and are therefore deemed improper as each and every element of the independent claims has not been shown or deemed obvious.

The examiner states on page 21 that Macor teaches that the information displayed on the "display is rotated to be in an orientation appropriate for viewing by a user utilizing the input keys." Macor's display is rotated by a hinge on a base member to reveal the display and keys at the same time; that is, the display must be rotated on the hinge and the device "opened" in order to allow the user to use the device (Macor, figures 6 and 7; column 1, lines 54-61). In the present invention, however, the display is rotated in order to allow the user to use the row of

input keys located on the side of the device comfortably. This teaches away from claim 35. There is no teaching or suggestion of using input keys on the side of the device in Macor.

Claim 36 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Kaehler as applied to claim 17, and further in view of Lo, USP 6,072,471.

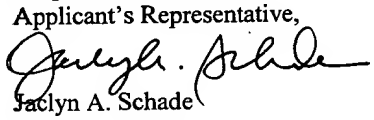
Claim 36 is dependent on claim 30 and adds that an equal number of input keys and selection keys are located upon the first one and second one of the side surfaces, with at least one key of the set of input keys acting as a selection key and at least one selection key acting as an input key as a result of switching between dominate hand modes. As stated by the examiner on page 21, neither Lu nor Kaehler teach that an equal number of input keys and selection keys are located upon the first one and second one of the side surfaces. As already noted above, it would not have been obvious to locate the input or selection keys on any of the side surfaces of Lu and Kaehler. Lu and Kaehler also do not teach at least one key of the set of input keys acting as a selection key and at least one selection key acting as an input key as a result of switching between dominate hand modes. Lo provides for an ambidextrous upright computer mouse. Lo teaches dominant hand modes that can be selectively activated and disabled and the use of control keys on a computer mouse. Lo does not teach the use of a reduced character input system, nor does it teach the use of a single keyboard style row depicting a subset of inputs. The combination of the left-right switching mechanism of Lo with Lu and Kaehler would therefore not produce the claimed invention, nor would it be deemed obvious. Thus, the rejection of this claim is without merit.

SUMMARY

As has been detailed above, none of the references, cited or applied, provide for the specific claimed details of applicant's presently claimed invention, nor render them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.

As this Appeal Brief has been timely filed within the set period of response, no petition for extension of time or associated fee is required. However, the Commissioner is hereby authorized to charge any deficiencies in the fees provided, to include an extension of time, to Deposit Account No. 09-0441.

Respectfully submitted by
Applicant's Representative,



Jaclyn A. Schade
Reg. No. 50,569

1725 Duke Street
Suite 650
Alexandria, VA 22314
(703) 838-7683

Claims Appendix:

1. A reduced set character entry system for an electronic appliance, said reduced set character entry system comprising:

a first set of multiple keys, said first set of multiple keys representing a selected subset comprising a single row of characters from a set of QWERTY style keyboard rows, each of said keys associated with a character of said selected subset such that when any of said first set of multiple keys is actuated said associated character is input to said electronic appliance;

a second set of keys, at least one of said second set of keys actuated to change said selected row, and

an electronic appliance display, said display displaying the characters of said selected row.

2. A reduced set character entry system for an electronic appliance, as per claim 1, wherein said electronic appliance display additionally displays previously input characters.

3. A reduced set character entry system for an electronic appliance, as per claim 2, wherein, each of said first set of multiple keys comprises an electronic character display and input mechanism, said electronic character display retaining an image of an associated character of the selected row and said electronic appliance display retaining only said previously input characters.

4. A reduced set character entry system for an electronic appliance, as per claim 1, wherein said electronic appliance comprises:

a top surface;

a bottom surface;

a plurality of side surfaces connecting said top surface and said bottom surface;

said electronic appliance display disposed on said top surface;

said first set of at least ten keys disposed on said top surface, and

said second set of keys disposed on one or more of said side surfaces.

5. A reduced set character entry system for an electronic appliance, as per claim 1, wherein said electronic appliance comprises:

a top surface;

a bottom surface;

a plurality of side surfaces connecting said top surface and said bottom surface;

said display disposed on said top surface, and

wherein one or more of said first and second set of keys are disposed on one or more of said side surfaces.

6. A reduced set character entry system for an electronic appliance, as per claim 1, wherein at least one of said second set of keys is actuated to shift the case of said characters associated with said first set of keys.

7. A reduced set character entry system for an electronic appliance, as per claim 1, wherein said second set of keys comprises two keys, a first of said two keys actuated to change said currently selected row to a row above said currently selected row and a second of said two keys actuated to change said currently selected row to a row below said currently selected row.

8. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces, said electronic appliance comprising:

a first set of input keys located on said top surface, said set comprising a single row of characters, wherein each of said input keys is associated with an individual character of a first subset of a set of input characters, said subset comprising a row of characters from a set of keyboard rows, and actuation of any of said input keys causing the character associated with said actuated input key to be input to said electronic appliance;

at least one selection key located on one of said side surfaces;

a display located on said top surface, said display displaying said first subset of

input characters, and

wherein actuation of said selection key changes said first subset to a second subset so that each of said input keys is associated with an individual character of said second subset and said display is changed to display said second subset.

9. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces, as per claim 8, wherein said display additionally displays previously input characters.

10. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces, as per claim 9, wherein said display comprises a plurality of displays, a first display showing said previously input characters and a second segmented display comprising each of said first set of input keys.

11. (canceled)

12. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces, as per claim 8, wherein said characters comprise any of: alphabetic, numerical, kanji or kana.

13. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces, as per claim 8, said electronic appliance further comprising:

at least one control key located on one of said side surfaces, and

wherein actuation of said control key causes said individual characters associated with said input keys to shift between lower case and upper case alphabetic characters.

14. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces, as per claim 8, wherein said

subsets are rows of a QWERTY style keyboard layout.

15. A compact keyboard input device for an electronic appliance, said input device comprising:

a set of character input keys, said set less in number than a QWERTY style keyboard input character set and displayed in a single row, each of said keys comprising an electronic character display and corresponding input mechanism;

each of said displays displaying an individual character of said QWERTY style keyboard input character set associated with said display, actuation of said corresponding input mechanism causing said displayed character to be input to said electronic appliance;

at least one selection key, and

wherein actuation of said selection key causes each of said displays to display a different individual character of said input character set.

16. A compact keyboard type input device for an electronic appliance, as per claim 15, wherein said electronic appliance has an output display, said output display displaying previously entered characters.

17. A compact keyboard type input device for an electronic appliance, as per claim 16, wherein said electronic appliance comprises:

a top surface;

a bottom surface;

a plurality of side surfaces connecting said top surface and said bottom surface;

said output display disposed on said top surface;

wherein one or more of said character keys and selection keys are disposed on one or more of said side surfaces.

18. A compact keyboard type input device for an electronic appliance, as per claim 15, said input device further comprising:

a control key, and

wherein said control key switches said displayed characters between upper case and lower case characters.

19. A compact keyboard type input device for an electronic appliance, as per claim 15, wherein said input character set is any of: alphabetic, numeric, kanji, or kana.

20. An electronic appliance having an input/output device, said appliance comprising:

a display, said display displaying a selected set of input characters;

a wrist band connected to said display for securing said display to the wrist of a user;

a flexible assembly operatively connected to said display;

said flexible assembly having a set of character keys located thereon, each of said character keys associated with an individual character of said selected set of input characters and at least one control key, wherein said selected set of input characters comprises a single row of characters from a set of keyboard rows, and

wherein actuation of any of said characters keys causes the character associated with said actuated key to be input into said device and actuation of said control key causes said currently selected set of input characters to be changed to a different set of input characters.

21. An electronic appliance having an input/output device, as per claim 20, wherein said flexible assembly is pivotal from a position where said assembly extends substantially along and underneath said wristband to a position substantially perpendicular to said wristband.

22. An electronic appliance having an input/output device, as per claim 20, wherein said electronic appliance is a wristwatch.

23. A portable phone including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system,

said portable phone comprising:

a display located on said top surface;

an input assembly operatively connected to said portable phone;

said input assembly having a set of character keys located thereon, each of said character keys associated with an individual character of a selected set of input characters, said selected set comprising a single row of characters from a set of keyboard rows, and at least one control key, and

wherein actuation of any of said characters keys causes the character associated with said actuated key to be input into said device and actuation of said control key causes said currently selected set of input characters to be changed to a different set of input characters.

24. A portable phone including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 23, wherein said input assembly is integrated with said portable phone, said input assembly rotatable from a closed position where said input assembly is substantially enclosed within said housing to a position where said character keys and said control key are exposed for actuation.

25. A portable phone including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 24, wherein said input assembly's axis of rotation is perpendicular to a plane containing said side surfaces.

26. A portable phone including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 23, wherein said input assembly is externally attachable to said portable phone.

27. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character

entry system, said electronic appliance comprising:

an input assembly integrally connected to said electronic appliance;

said input assembly having a set of character keys located thereon, each of said character keys associated with an individual character of a selected set of input characters, said selected set comprising a single row of characters from a set of keyboard rows, and at least one control key;

said input assembly positionable in a first position where said input assembly is substantially enclosed within said housing;

said input assembly positionable in a second position where said character keys and said control key are exposed for actuation;

wherein upon positioning said input assembly in said second position, actuation of any of said characters keys causes the character associated with said actuated key to be input into said device and actuation of said control key causes said currently selected set of input characters to be changed to a different set of input characters.

28. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 27, wherein said assembly is positionable in said second position via rotation of said assembly from said first position about an axis perpendicular to a plane containing said plurality of sides.

29. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 27, said electronic appliance further comprising a display located on said top surface.

30. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, said electronic appliance comprising:

a first set of input keys located on any of said side surfaces, said set of input keys arranged in a single row, each of said input keys associated with an individual character of a first subset of a set of input characters, said set of input characters comprising a row from a set of keyboard rows, and actuation of any of said input keys causing the character associated with said actuated input key to be input to said electronic appliance;

at least one selection key located on any of said side surfaces, and

wherein actuation of said selection key changes said first subset to a second subset so that each of said input keys is associated with an individual character of said second subset.

31. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 30, wherein said electronic appliance is a portable phone.

32. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 30, wherein said input keys and said selection key are located on different ones of said side surfaces.

33. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 31, wherein said input keys and said selection key are located on different ones of said side surfaces.

34. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 33, wherein said side surface having said input keys located thereon is opposite to said side surface having said selection key located thereon.

35. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 30, further comprising:

a display located on said top surface, and

wherein information displayed on said display is rotating to be in an orientation appropriate for viewing by a user utilizing said input keys.

36. An electronic appliance including a housing having top and bottom surfaces and a plurality of side surfaces connecting said top and bottom surfaces and a reduced set character entry system, as per claim 30, wherein an equal number of input keys and selection keys are located upon said first one and second one of said side surfaces, at least one key of said set of input keys acting as a selection key and at least one selection key acting as an input key as a result of switching between dominate hand modes.

Evidence Appendix

None

Related Proceedings Appendix

None

IFW AF

FEE TRANSMITTAL for FY 2004

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT | $ 330

Complete if Known	
Application Number	09/768,829
Filing Date	1/25/2001
First Named Inventor	Chu et al.
Examiner Name	Leland R. Jorgenson
Art Unit	2675
Attorney Docket No.	ARC920000016US1

METHOD OF PAYMENT

☐ Check ☐ Credit Card ☐ Money Order ☐ Other

☒ Deposit Account:

Deposit Account Number: 09-0441

Deposit Account Name: IBM CORPORATION

The Director is authorized to: *(check all that apply)*

☒ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) $ 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below	Fee Paid
Total Claims	-20** =		X		=
Independent Claims	-3** =		X		=
Multiple Dependent					=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) $ 0

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge – late filing fee or oath	
1052	50	2052	25	Surcharge – late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	465	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	1401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330
1403	290	2403	145	Request for oral hearing	
1451	1,510	1452	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,330	2453	665	Petition to revive – unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
				Other fee (specify):	

*Reduced by Basic Filing Fee Paid **SUBTOTAL (3)** $330

Name (Print/Type)	Jaclyn A. Schade	Registration No. (Attorney/Agent)	50,569	Telephone	703-838-7683
Signature	Jaclyn A. Schade			Date	September 24, 2004